

REMARKS

In response to the pending Office Action, claims 1, 3, 4, 6 and 16 have been amended. Claims 1, 3-16, and 18-20 are now active in this application. Claims 2 and 17 are cancelled without prejudice. No new matter has been added. The amendments are supported, at a minimum, by paragraph [0033] of the specification. Claims 1 and 16 are the only independent claims.

Claims 2 and 17 were objected to under 37 CFR 1.75(c) as improper for failing to further limit the subject matter of a previous claim. Claims 2 and 17 have been cancelled. Thus, Applicants submit that this rejection is moot.

Claims 1-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Poland et al. (U.S. 6,681,195) in view of Matsushita (JP 07-105481) and Fukada et al. (JP 09-202180). This rejection is traversed. Claims 2 and 17 have been cancelled. Thus, Applicants submit that this rejection is moot with respect to claims 2 and 17.

Amended independent claim 1 recites, in part, “an image forming section for **forming a two dimensional image of the front scene of the moving body** with the image of the actual or imaginary converging point of the lane of the running path for the moving body being at the center of the image frame on a image plane, wherein the image forming section includes a distortion lens having a characteristic of forming an image, with a height of the image being larger in a central area and smaller in a peripheral area so as to allow the central area of the image to have a high resolution; an image sensor for photo-electrically converting the two dimensional image into electric image data; a speed sensor for detecting a running speed of the moving body; a zoom ratio determining section for **determining a zoom ratio in accordance with the detected running speed.**”

An illustrative and non-limiting example of claim 1 is illustrated FIG. 14, wherein an automobile (“moving body”) is traveling in the direction of a road, and a camera is pointing down the road (“an image forming section for forming a two dimensional image of the front scene of the moving body”), and the zoom ratio determined as a function of the velocity of the automobile (“in accordance with the detected running speed”).

In order to establish a *prima facie* obviousness under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. In *re* Rokya, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Further, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” In *re* Kahn, 441 F. 3d 977, 988 (CA Fed. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited limitations.

Poland, at FIG. 1, element 142, merely discloses a lens system which, in a preferred embodiment, “provides a full field-of-view of 1.5 degrees and is focused at 80 meters to obtain sharp images from 50 to 120 meters,” according to column 7, lines 11-13.

Matsushita, at FIG. 1, merely discloses “the zoom lens 13,” according to the Abstract.

The Office Action, at page 6, admits that Poland and Matsushita does not disclose a distortion lens, and asserts that Fukuda discloses a distortion lens.

However, Fukuda, at FIGS. 2-4, discloses merely two fisheye cameras mounted at the sides of a vehicle (a truck in FIG. 2). The **Fukuda cameras are pointing sideways or laterally** (relative to the direction of the truck travel) at some other nearby vehicles (cars). Judging from FIG. 3, the purpose of the Fukuda fisheye distortion lens is to gain a wide angle view of the cars alongside of the truck. FIG. 4 appears to be a corrected view, wherein the fisheye distortion has

been removed by image processing. Thus, the purpose of Fukuda is to observe areas to the sides of the truck with a single fisheye lens for each side, and then to remove the distortion. Note that Fukuda does not disclose any zoom ratio as a function of the speed of the truck.

In contrast to Fukuda, independent claim 1 requires that the camera point forward, in the direction that the “moving body” (such as a vehicle) is traveling. Specifically, claim 1 recites, “forming a two dimensional image of the front scene of the moving body.”

Additionally in contrast to Fukuda, independent claim 1 recites, “determining a zoom ratio in accordance with the detected running speed [of the moving body].” Thus, independent claim 1 requires that the camera point forward, in the direction of the running speed which determines the zoom ratio.

Thus, none of the cited art discloses **determining a zoom ratio in a forward facing distortion lens in accordance with a detected running speed.**

To the contrary, the distortion lens of **Fukuda is intended to observe approximately 180 degrees to each side of the truck, and would never be zoomed, or else the wide field of view (approximately 180) would be lost. Effectively, Fukuda teaches against zooming the distortion lens.**

Additionally, even if, for the sake of argument, the cited art was interpreted as disclosing (in combination) all of the elements of claim 1, there is **no articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.** Specifically, the fisheye lens of Fukuda is directed at 90 degrees to the forward direction of the Fukuda truck, and there is no articulated reasoning for twisting the Fukuda camera 90 degrees to face forward. To the contrary, the Fukuda uses a fisheye lens in order to capture and more clearly view information that is at the periphery of the view of the fisheye lens. In other words, **the region of**

interest of Fukuda is the regions to the sides of the truck, and especially the peripheral regions of the sides of the truck.

The Office Action, at page 6, merely states, “[i]t would have been obvious to one of ordinary skill in the art to have been motivated at the time of invention. . . in order to capture an image of a larger area in the center of the image taking region, thus producing a higher quality image in the region of interest to allow the system to identify the object in the image.” As discussed above, Fukuda is directed to the peripheral regions of the sides of the truck, and not to the central region of the front of the truck.

Thus, Applicants submit that claim 1 is allowable over the cited art.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987).

Thus, it is respectfully submitted that dependent claims 3-15, and 18-20 are also allowable for at least the same reasons as independent claim 1.

Independent claim 16 recites, in part, “an image enlarging section for processing the image data to enlarge the image of the converted area with the zoom ratio determined by the zoom ratio determining section, wherein **photoelectric conversion data (image data) is read out only for the area determined in accordance with the zoom ratio in the effective imaging area in the image sensor**, such that only the predetermined area is photoelectrically converted and only the obtained area is read out.”

In this fashion, the device of claim 16 conserves energy and increases the processing speed because only the image data that will be used (“from the area determined in accordance

with the zoom ratio”) is read out. In other words, any peripheral regions that (will not be in the zoomed display image after the zoom ratio is applied) are not read out.

In order to establish a *prima facie* obviousness under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. In *re* Rokya, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Further, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited limitations.

Poland, at FIG. 1, element 142, merely discloses a lens system which, in a preferred embodiment, “provides a full field-of-view of 1.5 degrees and is focused at 80 meters to obtain sharp images from 50 to 120 meters,” according to column 7, lines 11-13.

Matsushita, at FIG. 1, merely discloses “the zoom lens 13,” according to the Abstract.

Fukuda merely discloses a “fisheye camera 2” at Abstract.

Thus, Applicants submit that the combination of Poland and Matsushita and Fukuda does not teach or suggest the above recited limitation of independent claim 16 (“photoelectric conversion data (image data) is read out only for the area determined in accordance with the zoom ratio in the effective imaging area in the image sensor”), and therefore claim 16 is allowable over the cited art.

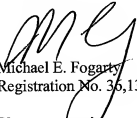
Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

Application No.: 10/617,761

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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